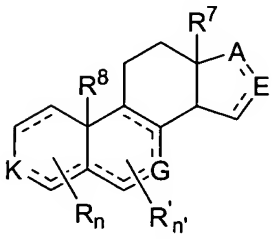
CLAIMS

WHAT IS CLAIMED IS:

1. A compound having the structure I,



I

a prodrug of the compound, a pharmaceutically acceptable salt of the compound, a stereoisomer of the compound, a tautomer of the compound, or a solvate of the compound, wherein,

A is -C(O)-, $=CR^9$-, or $-CR^9R^{10}$-;

E is -C(O)- , $=CR^5$-, or $-CR^5R^6$-, wherein A and E are not both -C(O)-;

G is -C(O)- , $=CR^3$-, or $-CR^3R^4$-;

K is -C(O)- , $=CR^1$-, or $-CR^1R^2$-;

R^1 is selected from the group consisting of $-OR^{11}$, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, substituted and unsubstituted heterocyclylalkyl, $-C(O)-R^{12}$, $-C(O)-NR^{12}R^{13}$, $-C(O)-OR^{12}$, $-C(S)-R^{12}$, $-C(S)-OR^{12}$, $-NR^{12}R^{13}$, $-NR^{12}-C(O)-R^{13}$, $-NR^{12}-C(O)-OR^{13}$, $-NR^{12}-C(O)-NR^{12}R^{13}$, and $-S(O)_{0-2}-R^{12}$;

R^2 is selected from the group consisting of -H, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, and substituted and unsubstituted lower alkyne;

R^3 and R^5 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

R^4 and R^6 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, -

NO_2, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

R^7 and R^8 are independently selected from the group consisting of -H and substituted and unsubstituted lower alkyl group;

R^9 and R^{10} are independently selected from the group consisting of substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -OH, wherein R^9 and R^{10} are not both -OH, substituted and unsubstituted lower alkoxy, and substituted and unsubstituted $-S(O)_{0-2}$(lower alkyl), or R^9 and R^{10}, together with the carbon to which they are attached, form a 5-, 6-, or 7-member heterocyclyl or cycloalkyl group;

R^{11} is selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, substituted and unsubstituted heterocyclylalkyl, $-C(O)-R^{12}$, $-C(O)-NR^{12}R^{13}$, $-C(O)-OR^{12}$, $-C(S)-R^{12}$, $-NR^{12}R^{13}$, $-S(O)_2-R^{12}$, $-S(O)_2-OR^{12}$, and $-P(O)(OR^{12})(OR^{13})_{0-1}$;

R^{12} and R^{13} are, at each occurrence, independently selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, and substituted and unsubstituted heterocyclylalkyl;

R^{14} and R^{15} are, at each occurrence, independently selected from the group consisting of -H, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, substituted and unsubstituted C_{6-10} aryl, and substituted and unsubstituted C_{7-12} arylalkyl;

R and R' are, at each occurrence, independently selected from the group consisting of -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

n and n' are independently 0, 1, or 2; and

wherein the dashed lines in structure I represent carbon-carbon double bonds or carbon-carbon single bonds contained within the fused four-ring system, such that the compound comprises a 1,6-diene, 1,7-diene, 1,8-diene, 1,15-diene, 1,16-diene, 4,8-diene, 3,16-diene, 1,3,5-triene, 1,3,16-triene, 1,5,7-triene, 1,5,15-triene, 1,8,15-triene, 1,5,16-triene, or 1,5, 7,15-tetraene, within the fused four-ring system.

2. The compound of claim 1, wherein the fused ring system is a 1,6-diene or 1,7-diene.

3. The compound of claim 1, wherein the fused ring system is a 1,8-diene.

4. The compound of claim 1, wherein the fused ring system is a 1,15-diene.

5. The compound of claim 1, wherein the fused ring system is a 1,16-diene or 3,16-diene.

6. The compound of claim 1, wherein the fused ring system is a 4,8-diene.

7. The compound of claim 1, wherein the fused ring system is a 1,3,5-triene or 1,3,16-triene.

8. The compound of claim 1, wherein the fused ring system is a 1,5,7-triene or 1,5,15-triene.

9. The compound of claim 1, wherein the fused ring system is a 1,8,15-triene, 1,5,16-triene, or 1,5, 7,15-tetraene.

10. The compound of claim 1, wherein A is $-CR^9R^{10}-$.

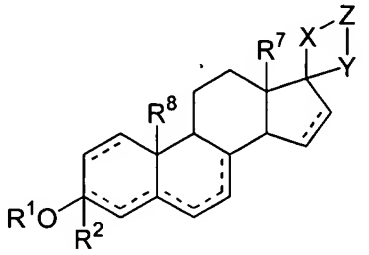
11. The compound of claim 1, wherein E is $-CR^5R^6-$.

12. The compound of claim 1, wherein G is $-CR^3R^4-$.

13. The compound of claim 1, wherein K is $-C(OR^{11})R^2-$.

14. The compound of claim 1, wherein E is $-CR^5R^6-$, G is $-CR^3R^4-$, and K is $-C(OR^{11})R^2-$.

15. The compound of claim 14 having the structure



wherein,

X and Y are independently selected from the group consisting of -NR^{14}-, -O-, -S-, and substituted and unsubstituted C_1 alkyl;

Z is substituted or unsubstituted C_{2-4} alkyl or substituted or unsubstituted -$(CR^{14}R^{15})_{2-3}$-; and

R^2 is -H or substituted or unsubstituted C_{1-4} alkyl.

16. The compound of claim 1, wherein R^{11} is selected from the group consisting of -H, substituted and unsubstituted alkyl, -C(O)-R^{12}, -C(O)-$NR^{12}R^{13}$, and -C(O)-OR^{12}.

17. The compound of claim 1, wherein R^{11} is selected from the group consisting of -H, -C(O)-R^{12} and -C(O)-OR^{12}.

18. The compound of claim 17, wherein R^{11} is -H or -C(O)-R^{12}, R^2 is -H, substituted or unsubstituted lower alkyl or substituted or unsubstituted lower alkynyl, R^7 is substituted or unsubstituted lower alkyl and R^8 is -H or substituted or unsubstituted lower alkyl.

19. The compound of claim 18, wherein R^{12} is selected from the group consisting of -H and substituted and unsubstituted lower alkyl.

20. The compound of claim 1, wherein R^7 and R^8 are both methyl.

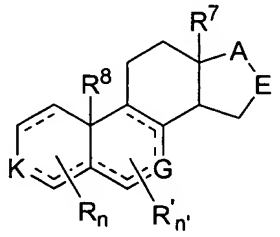
21. The compound of claim 1, wherein R^2 is -H.

22. The compound of claim 1, wherein A, E, G, or K is -C(O)-.

23. The compound of claim 1, wherein A is -C(O)-.

24. A pharmaceutical composition comprising one or more pharmaceutically acceptable carriers and a compound of claim 1.

25. A compound having the structure II,



II

a prodrug of the compound, a pharmaceutically acceptable salt of the compound, a stereoisomer of the compound, a tautomer of the compound, or a solvate of the compound, wherein

A is -C(O)- or -CR^9R^{10}-;

E is -C(O)- or -CR^5R^6-, wherein A and E are not both -C(O)-;

G is -C(O)-, =CR^3-, or -CR^3R^4-;

K is =$C(OR^{11})$-, or -$C(OR^{11})R^2$-;

R^2 is selected from the group consisting of -H, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, and substituted and unsubstituted lower alkyne;

R^3 and R^5 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, -$COOR^{14}$, -$C(O)NR^{14}R^{15}$, -NO_2, -$NR^{14}R^{15}$, -NR^{14}-C(O)-R^{15}, -OH, substituted and unsubstituted lower alkoxy, and -$S(O)_{0-2}R^{14}$;

R^4 and R^6 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, -$COOR^{14}$, -$C(O)NR^{14}R^{15}$, -NO_2, -$NR^{14}R^{15}$, -NR^{14}-C(O)-R^{15}, -OH, substituted and unsubstituted lower alkoxy, and -$S(O)_{0-2}R^{14}$;

R^7 and R^8 are independently selected from the group consisting of -H and substituted and unsubstituted lower alkyl group;

R^9 and R^{10} are independently selected from the group consisting of substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -OH, wherein R^9 and R^{10} are not both -OH, substituted and unsubstituted lower alkoxy, and substituted and unsubstituted -$S(O)_{0-2}$(lower alkyl), or R^9 and R^{10}, together with the carbon to which they are attached, form a 5-, 6-, or 7-member heterocyclyl or cycloalkyl group;

R^{11} is selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, substituted and unsubstituted heterocyclylalkyl, -C(O)-R^{12}, -C(O)-$NR^{12}R^{13}$, -C(O)-OR^{12}, -C(S)-R^{12}, -$NR^{12}R^{13}$, -$S(O)_2$-R^{12}, -$S(O)_2$-OR^{12}, and -$P(O)(OR^{12})(OR^{13})_{0-1}$;

R^{12} and R^{13} are, at each occurrence, independently selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, and substituted and unsubstituted heterocyclylalkyl;

R^{14} and R^{15} are, at each occurrence, independently selected from the group consisting of substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, substituted and unsubstituted C_{6-10} aryl, and substituted and unsubstituted C_{7-12} arylalkyl;

R and R' are, at each occurrence, independently selected from the group consisting of -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

n and n' are independently 0, 1, or 2; and

wherein the dashed lines in structure II represent carbon-carbon double bonds or carbon-carbon single bonds contained within the fused four-ring system, such that the compound comprises a 1,3-diene, 1,5-diene, or 1,4,6-triene within the fused four-ring system.

26. The compound of claim 25, wherein the fused ring system is a 1,5-diene.

27. The compound of claim 25, wherein A is $-CR^9R^{10}-$.

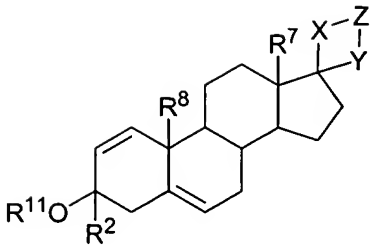
28. The compound of claim 25, wherein E is $-CR^5R^6-$.

29. The compound of claim 25, wherein G is $-CR^3R^4-$.

30. The compound of claim 25, wherein K is $-C(OR^{11})R^2-$.

31. The compound of claim 25, wherein E is $-CR^5R^6-$, G is $-CR^3R^4-$, and K is $-C(OR^{11})R^2-$.

32. The compound of claim 31 having the structure



wherein,

X and Y are independently selected from the group consisting of -NR^{14}-, -O-, -S-, and substituted and unsubstituted C_1 alkyl;

Z is substituted or unsubstituted C_{2-4} alkyl or substituted or unsubstituted -$(CR^{14}R^{15})_{2-3}$-; and

R^2 is -H or substituted or unsubstituted C_{1-4} alkyl.

33. The compound of claim 32, wherein R^{11} is -H or -C(O)-R^{12}, R^2 is -H, substituted or unsubstituted lower alkyl or substituted or unsubstituted lower alkynyl, R^7 is substituted or unsubstituted lower alkyl, R^8 is -H or substituted or unsubstituted lower alkyl and X and Y independently are -NR^{14}- or -O-..

34. The compound of claim 25, wherein the fused four-ring system is a 1,3-diene or a 1,4,6-triene.

35. The compound of claim 25, wherein R^{11} is selected from the group consisting of -H, substituted and unsubstituted alkyl, -C(O)-R^{12}, -C(O)-$NR^{12}R^{13}$, and -C(O)-OR^{12}.

36. The compound of claim 25, wherein R^{11} is selected from the group consisting of -H, -C(O)-R^{12} and -C(O)-OR^{12}.

37. The compound of claim 36, wherein R^{11} is -C(O)-R^{12}, R^2 is -H, substituted or unsubstituted lower alkyl or substituted or unsubstituted lower alkynyl, R^7 is substituted or unsubstituted lower alkyl and R^8 is -H or substituted or unsubstituted lower alkyl.

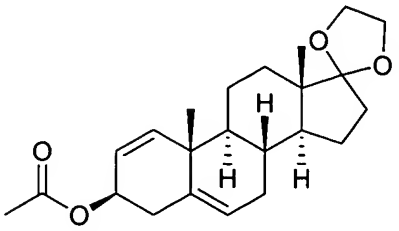
38. The compound of claim 37, wherein R^{12} is selected from the group consisting of -H and substituted and unsubstituted lower alkyl.

39. The compound of claim 25, wherein R^7 and R^8 are both methyl.

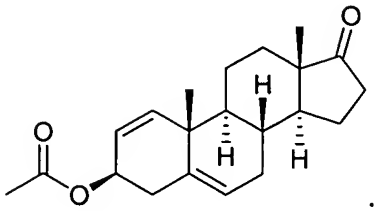
40. The compound of claim 25, wherein R^2 is -H.

41. The compound of claim 25, wherein A is -C(O)-.

42. The compound of claim 25 having the structure:



or



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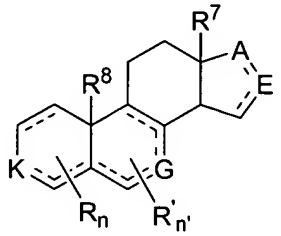
43. A pharmaceutical composition comprising one or more pharmaceutically acceptable carriers and ADEK or a compound of claim 25.

44. A method of treating, preventing or ameliorating a condition mediated by an androgen receptor comprising administering to a subject in need thereof, an effective amount of a compound having the structure III,



III

a prodrug of the compound, a pharmaceutically acceptable salt of the compound, a stereoisomer of the compound, a tautomer of the compound, or a solvate of the compound, wherein,

A is -C(O)-, $=CR^9$-, or $-CR^9R^{10}$-;

E is -C(O)- , $=CR^5$-, or $-CR^5R^6$-, wherein A and E are not both -C(O)-;

G is -C(O)- , $=CR^3$-, or $-CR^3R^4$-;

K is -C(O)- , $=CR^1$-, or $-CR^1R^2$-;

R^1 is selected from the group consisting of $-OR^{11}$, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, substituted and unsubstituted heterocyclylalkyl, -C(O)-R^{12}, -C(O)-$NR^{12}R^{13}$, -C(O)-OR^{12}, -C(S)-R^{12}, -C(S)-OR^{12}, -$NR^{12}R^{13}$, -NR^{12}-C(O)-R^{13}, -NR^{12}-C(O)-OR^{13}, -NR^{12}-C(O)-$NR^{12}R^{13}$, and -$S(O)_{0-2}$-R^{12};

R^2 is selected from the group consisting of -H, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, and substituted and unsubstituted lower alkyne;

R^3 and R^5 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

R^4 and R^6 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

R^7 and R^8 are independently selected from the group consisting of -H and substituted and unsubstituted lower alkyl group;

R^9 and R^{10} are independently selected from the group consisting of substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -OH, wherein R^9 and R^{10} are not both -OH, substituted and unsubstituted lower alkoxy, and substituted and unsubstituted $-S(O)_{0-2}$(lower alkyl), or R^9 and R^{10}, together with the carbon to which they are attached, form a 5-, 6-, or 7-member heterocyclyl or cycloalkyl group;

R^{11} is selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, substituted and unsubstituted heterocyclylalkyl, $-C(O)-R^{12}$, $-C(O)-NR^{12}R^{13}$, $-C(O)-OR^{12}$, $-C(S)-R^{12}$, $-NR^{12}R^{13}$, $-S(O)_2-R^{12}$, $-S(O)_2-OR^{12}$, and $-P(O)(OR^{12})(OR^{13})_{0-1}$;

R^{12} and R^{13} are, at each occurrence, independently selected from the group consisting of -H, substituted and unsubstituted alkyl, substituted and unsubstituted alkene, substituted and unsubstituted alkyne, substituted and unsubstituted aryl, substituted and unsubstituted arylalkyl, substituted and unsubstituted heterocyclyl, and substituted and unsubstituted heterocyclylalkyl;

R^{14} and R^{15} are, at each occurrence, independently selected from the group consisting of substituted and unsubstituted lower alkyl, substituted and unsubstituted

lower alkene, substituted and unsubstituted lower alkyne, substituted and unsubstituted C_{6-10} aryl, and substituted and unsubstituted C_{7-12} arylalkyl;

R and R' are, at each occurrence, independently selected from the group consisting of -F, -Cl, -Br, -I, substituted and unsubstituted lower alkyl, substituted and unsubstituted lower alkene, substituted and unsubstituted lower alkyne, -CN, $-COOR^{14}$, $-C(O)NR^{14}R^{15}$, $-NO_2$, $-NR^{14}R^{15}$, $-NR^{14}-C(O)-R^{15}$, -OH, substituted and unsubstituted lower alkoxy, and $-S(O)_{0-2}R^{14}$;

n and n' are independently 0, 1, or 2; and

wherein the dashed lines in structure III represent carbon-carbon double bonds or carbon-carbon single bonds contained within the fused four-ring system, such that the compound comprises a 1,3-diene, 1,5-diene, 1,6-diene, 1,7-diene, 1,8-diene, 1,15-diene, 1,16-diene, 3,16-diene, 4,8-diene, 1,3,5-triene, 1,4,6-triene, 1,3,16-triene, 1,5,7-triene, 1,5,15-triene, 1,8,15-triene, 1,5,16-triene, or 1,5, 7,15-tetraene, within the fused four-ring system.

45. The method of claim 44, wherein the condition is prostate cancer.

46. The method of claim 45, wherein the condition is androgen-independent prostate cancer.

47. The method of claim 44, wherein the condition is antiandrogen induced withdrawal syndrome.

48. The method of claim 47, wherein the subject is afflicted with prostate cancer.

49. The method of claim 44, wherein the compound comprises a 1,3-diene, 1,5-diene, 1,7-diene, 1,8-diene, 1,15-diene, 1,16-diene, or 4,8-diene within the fused four-ring system.

50. The method of claim 44, wherein the compound comprises a 1,5-diene within the fused four-ring system.

51. The method of claim 44, wherein the compound comprises a 1,3,5-triene, 1,4,6-triene, 1,5,15-triene, or 1,5,16-triene within the fused four-ring system.

52. The method of claim 44, wherein K is $-CR^1R^2-$.

53. The method of claim 52, wherein R^1 is $-OR^{11}$.